**Broadcom**
5300 California Avenue
Irvine, CA 92617
**broadcom.com**

July 27, 2016

**Ex Parte**

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

*Re: Notice of Oral Ex Parte: Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49*

Dear Ms. Dortch:

On July 25, 2016, Christopher Szymanski, Director of Product Marketing and Government Affairs at Broadcom, met telephonically with Rashmi Doshi, FCC Office of Engineering Technology Laboratory Division Chief to discuss Broadcom's intent to be responsive to the Commission's request for "5.9 GHz prototype unlicensed, interference-avoiding devices" for testing as contemplated in the above referenced proceeding.[1]

Broadcom believes that the testing process is an opportunity to demonstrate that under the rechannelization proposal:

- The U-NII-4 band can be used quickly and meaningfully in the near term by existing Wi-Fi devices;
- DSRC delay sensitive Basic Safety Message (BSM) traffic is better protected under the re-channelization proposal (i.e., in CH180, CH182, & CH184) rather than the existing plan, which would leave the primary BSM traffic in CH172; and
- Sharing in the lower portion of the DSRC band can be accomplished using 20MHz channels (signal bandwidth). If required by the FCC, DSRC traffic using 20 MHz signal bandwidth can be prioritized through Wi-Fi modified Enhanced Distributed Channel Access (EDCA) parameters.

[1] *See The Commission Seeks to Update and Refresh the Record in the "Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band" Proceeding*, Public Notice, ET Docket No. 13-49 (rel. June 1, 2016) ("*Public Notice*"); *see also Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Notice of Proposed Rulemaking, 28 FCC Rcd. 1769 (2013) ("*NPRM*").

Because the testing would require coexistence in lower level signal conditions (e.g., -85 dBm), Broadcom recommends that the Commission create a test bed and engage in conducted wired testing using cable connections, radio frequency (RF) isolation boxes, laptop computers, and RF attenuators, among other basic components. This test would involve DSRC devices capable of operating using a 20 MHz signal bandwidth in Channels 173 and 177, or devices emulating DSRC transmissions, in order to demonstrate the viability of modified EDCA parameters in providing priority for 20MHz co-channel DSRC traffic, as required. Such a test setup will enable the Commission to more precisely calibrate and measure the viability of the rechannelization and prioritization proposal under varying signal to noise or interference levels, and different traffic loading scenarios.

This test will require a complete test bed that will require engineering assistance, and may require software updates and calibration assistance from time to time. As such, Broadcom respectfully requests that the Commission allow it to provide equipment and software in multiple stages.

In the first stage, Broadcom intends to provide two of its initial prototype U-NII-4 enabled devices (one to function as an AP and one to function as a client device), in which the Commission can begin performing its various tests and measurements, such as in band energy level, adjacent channel emissions, and out of band emissions, for example. Broadcom targets delivery of these devices by July 30th in accordance with the deadline set by the Commission in the Public Notice.[2]

In the second stage, Broadcom currently intends to provide the supplemental equipment and instructions necessary to create the test bed. Before providing equipment for the second stage, Broadcom respectfully requests that the Commission conduct a review of its current equipment availability, including all the equipment provided by third parties in response to the request for prototype devices. Broadcom then requests that the Commission provide a list of available equipment so that Broadcom can reach a determination on the number and types of equipment that it believes it must provide to the Commission in order to complete the test bed. Broadcom currently targets delivery of the stage two equipment on September 15, 2016.

Finally, Broadcom intends to support the Commission in the initial set up and calibration of the test bed, including the provision of any software updates for the devices originally provided on or around July 30. Broadcom notes that additional software updates and calibration assistance may be required throughout this process, and would make every reasonable effort to support the Commission as necessary.

We thank the Commission for the consideration of our request, which we believe will allow us to support the goals of the testing in the most efficient and cost effective manner.

---

[2] *See Public Notice* at 10.

Pursuant to the Commission's rules, a copy of this notice is being filed electronically in the above-referenced docket. If you require any additional information please contact the undersigned.

Sincerely,

*/s/ Christopher Szymanski*
Christopher Szymanski
Director, Product Marketing and
Government Affairs

cc: meeting participant